Set	Items	Description
S1	481146	REVERSE? OR BACKWARD? OR INVERSE? OR CONVERSE?
S2	30	(STAR OR SNOWFLAKE OR SNOW()FLAKE)(1W)(SCHEMA? OR SCHEME? - OR QUERY OR QUERIES)
S3	208858	DATABASE? OR DATABANK? DATAWAREHOUS? OR DATA()(WAREHOUS? OR MART? ? OR STORE? ? OR BASE OR BASES OR BANK? ? OR SYSTEM?) - OR MDDB OR OODB OR DBMS
S4	0	S1 AND S2

? show files
File 344:Chinese Patents Abs Aug 1985-2005/May
          (c) 2005 European Patent Office
File 347:JAPIO Nov 1976-2005/Feb(Updated 050606)
          (c) 2005 JPO & JAPIO
File 350:Derwent WPIX 1963-2005/UD,UM &UP=200544
          (c) 2005 Thomson Derwent

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Set      Items    Description
S1      481146    REVERSE? OR BACKWARD? OR INVERSE? OR CONVERSE?
S2          30    (STAR OR SNOWFLAKE OR SNOW()FLAKE)(1W)(SCHEMA? OR SCHEME? -
                  OR QUERY OR QUERIES)
S3      208858    DATABASE? OR DATABANK? DATAWAREHOUS? OR DATA()(WAREHOUS? OR
                  MART? ? OR STORE? ? OR BASE OR BASES OR BANK? ? OR SYSTEM?) -
                  OR MDDB OR OODB OR DBMS
S4     2794633    POPULAT??? OR GENERAT??? OR ESTABLISH??? OR CREAT???
S5           0    S1(3N)S2
S6           0    S1(S)S2
S7          22    S2 AND S3
S8           0    S7 AND S1
? show files
File 344:Chinese Patents Abs Aug 1985-2005/May
         (c) 2005 European Patent Office
File 347:JAPIO Nov 1976-2005/Feb(Updated 050606)
         (c) 2005 JPO & JAPIO
File 350:Derwent WPIX 1963-2005/UD,UM &UP=200544
         (c) 2005  Thomson Derwent
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Set       Items     Description
S1        3880      AU=(CHEN, L? OR CHEN L?)
S2         102      S1 AND IC=G06F-017?
S3          31      S2 AND (DATABASE? OR DATABANK? DATAWAREHOUS? OR DATA()(WAR-
                    EHOUS? OR MART? ? OR STORE? ? OR BASE OR BASES OR BANK? ? OR -
                    SYSTEM?) OR MDDB OR OODB OR DBMS)
S4           6      S3 AND ((STAR OR SNOWFLAKE OR SNOW()FLAKE)(1W)(SCHEMA? OR -
                    SCHEME? OR QUERY OR QUERIES) )
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? show files
File 344:Chinese Patents Abs Aug 1985-2005/May
         (c) 2005 European Patent Office
File 347:JAPIO Nov 1976-2005/Feb(Updated 050606)
         (c) 2005 JPO & JAPIO
File 350:Derwent WPIX 1963-2005/UD,UM &UP=200544
         (c) 2005 Thomson Derwent
File 348:EUROPEAN PATENTS 1978-2005/Jun W04
         (c) 2005 European Patent Office
File 349:PCT FULLTEXT 1979-2005/UB=20050707,UT=20050630
         (c) 2005 WIPO/Univentio

Oriental patents (handwritten)

4/5/1   (Item 1 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2005 WIPO/Univentio. All rts. reserv.

01008692   **Image available**
SPATIAL INTELLIGENCE SYSTEM AND METHOD
SYSTEME SPATIAL DE RENSEIGNEMENT ET PROCEDE CORRESPONDANT
Patent Applicant/Assignee:
  METAEDGE CORPORATION, 1257 Tasman Drive, Suite C, Sunnyvale, CA 94089, US
    , US (Residence), US (Nationality)
Inventor(s):
   CHEN Li-Wen , 7725 Oak Meadow Court, Cupertino, CA 95014, US,
  LUU Victor, 2805 Vista Del Valle, Morgan Hill, CA 95037, US
Legal Representative:
  JOSEPHSON Daryl C (et al) (agent), Squire, Sanders & Dempsey L.L.P., 600
    Hansen Way, Palo Alto, CA 94304-1043, US,
Patent and Priority Information (Country, Number, Date):
  Patent: WO 200338684 A1 20030508 (WO 0338684)
  Application: WO 2002US3854 20020201 (PCT/WO US0203854)
  Priority Application: US 2001348463 20011029; US 200117701 20011214
Designated States:
(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)
  AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ
  EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR
  LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL
  TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
  (EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
  (OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
  (AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
  (EA) AM AZ BY KG KZ MD RU TJ TM
Main International Patent Class: **G06F-017/30**
Publication Language: English
Filing Language: English
Fulltext Availability:
  Detailed Description
  Claims
Fulltext Word Count: 12442

English Abstract
  The present invention provides techniques for analyzing and managing
  information having a spatial component (106). Techniques such as virtual
  schemas (601) can be used to create meta models for analyzing spatial
  information, in conjunction with information about other centric
  entities, including business entities, technical entities, and
  governmental entities. Specific embodiments provide systems, methods,
  computer programs and apparatus for populating **databases** (101) in
  accordance with the defined meta models (401) and analyzing information
  having spatial components in a variety of business, technical and
  governmental applications.

French Abstract
  La presente invention concerne des procedes d'analyse et de gestion
  d'information a composante spatiale (106). On peut recourir a des
  techniques telles que les schemas virtuels (601) pour creer des
  meta-modeles d'analyse de l'information spatiale, en relation avec de
  l'information concernant d'autres entites, et notamment des entites
  appartenant au monde du commerce, de l'industrie ou de la technique, et
  des administrations d'etats. Certains modes de realisation concernent des

systemes, des procedes, des logiciels et des appareils permettant de
peupler des bases de donnees (101) en fonction des meta-modeles definis
(401) et d'analyser l'information a composantes spatiales dans le cas de
diverses applications du monde du commerce, de l'industrie ou de la
technique, et des administrations d'etats.

Legal Status (Type, Date, Text)
Publication 20030508 A1 With international search report.

4/5/2   (Item 2 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00948082   **Image available**
METHOD AND SYSTEM FOR DECISION SUPPORT ANALYSIS
PROCEDE ET SYSTEME D'ANALYSE D'AIDE A LA DECISION
Patent Applicant/Assignee:
  METAEDGE CORPORATION, 1257 Tasman Drive, Suite C, Sunnyvale, CA 94089, US
    , US (Residence), US (Nationality)
Inventor(s):
   CHEN Li-Wen , 7725 Oak Meadow Court, Cupertino, CA 95014, US,
  SHENG Rounda, 21791 Heber Way, Saratoga, CA 95070, US
Legal Representative:
  DURDIK Paul A (et al) (agent), Squire, Sanders & Dempsey L.L.P., 600
    Hansen Way, Palo Alto, CA 94304-1043, US,
Patent and Priority Information (Country, Number, Date):
  Patent: WO 200282209 A2-A3 20021017 (WO 0282209)
  Application: WO 2001US27200 20010830 (PCT/WO US0127200)
  Priority Application: US 2001827969 20010404
Designated States:
(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)
  AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ
  EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR
  LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL
  TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
  (EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
  (OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
  (AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
  (EA) AM AZ BY KG KZ MD RU TJ TM
Main International Patent Class: **G06F-017/60**
Publication Language: English
Filing Language: English
Fulltext Availability:
  Detailed Description
  Claims
Fulltext Word Count: 10809

English Abstract
  The present invention provides techniques for managing and analyzing
  business information. Specific embodiments, a first plurality of
  information is modeled using a first logical model (1101). The logical
  model is converted into a first derived subject model (1102). The first
  derived subject model is converted into the first physical model (1103).
  The model also includes mapping at least one relationship among the first
  plurality of information in the **database** based upon the first physical
  model (1104). Dynamic attributes and profiles can be derived (1105). The
  method also includes defining analyses based on available applications

(1106). A check can be performed in some specific embodiments, to
determine if a user would like to iteratively perform the method again to
refine the model (1107).

French Abstract
    La presente invention concerne des techniques de gestion et d'analyse
    d'informations de gestion. Des modes de realisation specifiques proposent
    des modeles permettant aux responsables de gestion ou d'autres activites
    non techniques de comprendre et de manipuler les relations entre diverses
    entites de donnees des bases de donnees. Des modes de realisations
    specifiques concernent diverses applications. On dispose ainsi de modeles
    pluridimensionnels, de calculs statistiques, de systemes a base de
    regles, de generateurs de comptes rendus, et analogues, que l'on peut
    utiliser pour divers modes de realisation specifiques, de facon a
    permettre au decisionnaire de decider, d'analyser et de proposer des
    relations entre diverses entites d'information.

Legal Status (Type, Date, Text)
Publication   20021017 A2 Without international search report and to be
                          republished upon receipt of that report.
Search Rpt   20030821 Late publication of international search report
Republication 20030821 A3 With international search report.

4/5/3   (Item 3 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00893388   **Image available**
METHOD AND SYSTEM FOR MANAGING EVENT ATTRIBUTES
PROCEDE ET SYSTEME DE GESTION D'ATTRIBUTS D'EVENEMENTS
Patent Applicant/Assignee:
    METAEDGE CORPORATION, 1257 Tasman Drive, Suite C, Sunnyvale, CA 94089, US
    , US (Residence), US (Nationality)
Inventor(s):
    CHEN Li-Wen , 7725 Oak Meadow Court, Cupertino, CA 95014, US
Legal Representative:
    DURDIK Paul A (et al) (agent), Squire, Sanders & Dempsey L.L.P., 600
    Hansen Way, Palo Alto, CA 94304-1043, US,
Patent and Priority Information (Country, Number, Date):
    Patent: WO 200227528 A1 20020404 (WO 0227528)
    Application: WO 2001US29801 20010924 (PCT/WO US0129801)
    Priority Application: US 2000235390 20000925; US 2000235373 20000925; US
        2001309214 20010731; US 2001309633 20010801; US 2001963062 20010924; US
        2001963145 20010924
Designated States:
(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)
    AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ
    EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR
    LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL
    TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
    (EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
    (OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
    (AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
    (EA) AM AZ BY KG KZ MD RU TJ TM
Main International Patent Class: **G06F-017/00**
International Patent Class: **G06F-017/30** ; G06F-013/00; G06F-015/18
Publication Language: English

Filing Language: English
Fulltext Availability:
  Detailed Description
  Claims
Fulltext Word Count: 16315

English Abstract
  The present invention provides techniques for managing and analyzing
  business information (100) comprising a computer system (102), coupled to
  database (101), a metadata respository (110). Specific embodiments
  provide persons with business or other non-technical fields with the
  capability to create, edit, and work with data models, profiles, and
  reports for business and other information. Specific embodiments can
  enable business and other non-technical users with enhanced understanding
  of information, and greater capabilities to manipulate relationships
  between various data entities in **databases** , for example.

French Abstract
  L'invention concerne des techniques de gestion et d'analyse
  d'informations commerciales (100), lesquelles mettent en oeuvre un
  systeme informatique (100), couple a une base de donnees, ainsi qu'un
  service d'archivage de metadonnees (110). Des modes de realisation
  specifique fournissent a des personnes des domaines commerciaux ou non
  techniques, et offrent a celles-ci la possibilite de creer, editer des
  modeles de donnees, profils et rapports destines a des informations
  commerciales ou autres, et de travailler a l'aide de ces modeles, profils
  et rapports. D'autres modes de realisation specifiques permettent a des
  utilisateurs commerciaux ou non techniciens une meilleure comprehension
  des informations et des possibilites accrues de manipulation des
  relations entre diverses entites de donnees, dans des bases de donnees,
  par exemple.

Legal Status (Type, Date, Text)
Publication 20020404 A1 With international search report.
Withdrawal   20020926 Withdrawal of priority claims after international
                       publication: US 09/963,145 20010924
Examination   20030109 Request for preliminary examination prior to end of
                       19th month from priority date

4/5/4   (Item 4 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2005 WIPO/Univentio. All rts. reserv.

00743943   **Image available**
METHOD FOR DYNAMIC CUSTOMER PROFILING IN DATABASE
**PROCEDE   PERMETTANT D'ETABLIR LE PROFIL DYNAMIQUE D'UN CLIENT DANS UNE BASE
    DE DONNEES**
Patent Applicant/Assignee:
  METAEDGE CORPORATION, Suite 245, 2620 Augustine Drive, Santa Clara, CA
    95054, US, US (Residence), US (Nationality)
Inventor(s):
  CHEN Li-Wen , 7725 Oak Meadow Court, Cupertino, CA 95014, US
  FENG Hwa Chung, 20372 Silverado Avenue, Cupertino, CA 95014, US
Legal Representative:
  YEE George B F, Townsend and Townsend and Crew LLP, Two Embarcadero
    Center, 8th floor, San Francisco, CA 94111-3834, US
Patent and Priority Information (Country, Number, Date):
  Patent: WO 200057312 A1 20000928 (WO 0057312)

Application: WO 2000US7814 20000322 (PCT/WO US0007814)
    Priority Application: US 99125721 19990323; US 2000532366 20000321
Designated States:
(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)
    AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES
    FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU
    LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT
    TZ UA UG UZ VN YU ZA ZW
    (EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
    (OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
    (AP) GH GM KE LS MW SD SL SZ TZ UG ZW
    (EA) AM AZ BY KG KZ MD RU TJ TM
Main International Patent Class: **G06F-017/30**
Publication Language: English
Filing Language: English
Fulltext Availability:
  Detailed Description
  Claims
Fulltext Word Count: 6953

English Abstract
    According to the present invention creating and accessing customer
    information (402) in a **database** , **data mart** or **data warehouse** ,
    segmenting customer information into one or more groups of customers
    (404), having one or more attributes. The segmenting can be based upon a
    value for the attribute of interest. Defining one or more profiles (406)
    are part of the method, a profile can comprise one or more groups,
    analyzing customer information (408) for a plurality of users, evaluating
    to specific values used to select which group a particular customer
    belongs, mapping to specific customer groups based on segment code values
    assigned to the various groups of customers.

French Abstract
    L'invention concerne la creation de et l'acces a des informations (402)
    sur des clients dans une base de donnees, un depot de donnees ou un
    magasin de donnees, ainsi que la segmentation desdites informations en un
    ou plusieurs groupes de clients (404) possedant un ou plusieurs
    attributs. La segmentation peut etre basee sur une valeur affectee a
    l'attribut d'interet. Le procede comprend la definition d'un ou de
    plusieurs profils (406), un profil pouvant comprendre un ou plusieurs
    groupes; l'analyse des informations sur les clients (408) pour une
    pluralite d'utilisateurs; l'evaluation par rapport a des valeurs
    specifiques utilisees pour selectionner le groupe auquel appartient un
    certain client; et la mise en correspondance avec des groupes specifiques
    de clients sur la base de valeurs de code segmentaire affectees aux
    divers groupes de clients.

Legal Status (Type, Date, Text)
Publication . 20000928 A1 With international search report.
Publication   20000928 A1 Before the expiration of the time limit for
                            amending the claims and to be republished in the
                            event of the receipt of amendments.
Examination   20001207 Request for preliminary examination prior to end of
                            19th month from priority date

    4/5/5   (Item 5 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00579159   **Image available**
METHOD FOR PROVIDING A REVERSE STAR   SCHEMA **DATA MODEL**
PROCEDE   PERMETTANT   DE REALISER UN MODELE DE DONNEES POUR SCHEMA EN ETOILE
    INVERSEE
Patent Applicant/Assignee:
  METAEDGE CORPORATION,
  CHEN Li-Wen,
  ORTIZ Juan J,
Inventor(s):
   CHEN Li-Wen ,
  ORTIZ Juan J
Patent and Priority Information (Country, Number, Date):
  Patent: WO 200042532 A1 20000720 (WO 0042532)
  Application: WO 2000US906 20000113 (PCT/WO US0000906)
  Priority Application: US 99116086 19990115; US 99306677 19990506; US
    99306650 19990506; US 99306693 19990506
Designated States:
(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)
  AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB
  GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA
  MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA
. UG US US US US UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ TZ UG ZW AM AZ BY
  KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
  BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
Main International Patent Class: **G06F-017/30**
Publication Language: English
Fulltext Availability:
  Detailed Description
  Claims
Fulltext Word Count: 11569

English Abstract
  According to the invention, techniques for organizing information from
  systems in a **data   warehousing** environment are provided. In an
  exemplary embodiment, the invention provides a method for analyzing data
  from one or more data sources of an enterprise data (204). The method
  provides a meta-model based tehnique for modeling the enterprise data
  (204). The enterprise is typically a business activity (203), but can
  also be other loci of human activity. Embodiments according to the
  invention can translate data from a variety of sources (203, 204) to
  particular **database** schema in order to provide organization (200-204)
  to a **data   warehousing** environment.

French Abstract
  La presente invention concerne des techniques permettant d'organiser
  l'information en provenance de systemes fonctionnant dans un
  environnement d'entreposage electronique massif. L'invention concerne
  plus particulierement un procede permettant d'analyser les donnees d'au
  moins une source situee dans les donnees (204) d'une entreprise. Le
  procede est en fait un procede a base de meta-modele concu pour la
  modelisation des donnees (204) d'une entreprise. Cette entreprise est
  generalement une entreprise (203) commerciale, mais elle peut egalement
  s'interesser a d'autres domaines de l'activite humaine. Des realisations
  de l'invention permettent la traduction des donnees d'une multiplicite de
  sources (203, 204) pour qu'elles s'inserent dans le schema particulier
  d'une base de donnees de facon a conferer une organisation (200-204) a un

environnement d'entreposage electronique massif.

4/5/6   (Item 6 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00579157   **Image available**
METHOD FOR VISUALIZING INFORMATION IN A DATA   WAREHOUSING   **ENVIRONMENT**
PROCEDE   DE   VISUALISATION D'INFORMATIONS DANS UN ENVIRONNEMENT DE DEPOT DE
    DONNEES
Patent Applicant/Assignee:
  METAEDGE CORPORATION,
  CHEN Li-Wen,
Inventor(s):
    CHEN Li-Wen
Patent and Priority Information (Country, Number, Date):
  Patent: WO 200042530 A1 20000720 (WO 0042530)
  Application: WO 2000US1075 20000113 (PCT/WO US0001075)
  Priority Application: US 99116016 19990115; US 2000483385 20000113; US
    2000483182 20000113; US 2000483386 20000113
Designated States:
(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)
  AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB
  GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA
  MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA
  UG US US US US UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ TZ UG ZW AM AZ BY
  KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
  BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
Main International Patent Class: **G06F-017/30**
Publication Language: English
Fulltext Availability:
  Detailed Description
  Claims
Fulltext Word Count: 11780

English Abstract
  According to the invention, techniques for visualizing customer data
  (103) contained in **databases** (6), **data   marts** and **data   warehouses**
   (8). In an exemplary embodiment, the invention provides a method for
  graphically analyzing relationships in data (103) from one or more data
  sources of an enterprise. The method can be used with many popular
  visualization tools (21), such as a On Line Analytical Processing (OLAP)
  tools (2) and the like. The method is especially useful in conjunction
  with a meta-model (103) based technique for modeling the enterprise data.
  The enterprise is typically a business activity (21), but can also be
  other loci of human activity (10). Embodiments according to the invention
  can display data from a variety of sources in order to provide visual
  representations of data in a **data   warehousing** environment (8).

French Abstract
  L'invention concerne des techniques permettant de visualiser des donnees
  (103) de client contenues dans des bases (6) de donnees, des magasins et
  des depots (8) de donnees. Dans un mode de realisation exemplaire,
  l'invention concerne un procede permettant d'analyser graphiquement des
  relations entre des donnees (103) provenant d'une ou de plusieurs sources
  de donnees d'une entreprise. Le procede peut etre utilise avec de
  nombreux outils (21) de visualisation populaires, tels des outils (2) de

traitement analytique en ligne (OLAP) et analogue. Le procede est
specialement utile conjointement avec une technique de metamodeles (103)
pour la modelisation des donnees d'entreprise. L'entreprise est
generalement une activite (21) commerciale, mais peut egalement concerner
d'autres activites (10) humaines. Les modes de realisation de l'invention
permettent d'afficher des donnees provenant de diverses sources pour
fournir des representations visuelles de donnees dans un environnement
(8) de depot de donnees.

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Set      Items    Description
S1       475930   REVERSE? OR BACKWARD? OR INVERSE? OR CONVERSE?
S2          113   (STAR OR SNOWFLAKE OR SNOW()FLAKE)(1W)(SCHEMA? OR SCHEME? -
                  OR QUERY OR QUERIES)
S3       194904   DATABASE? OR DATABANK? DATAWAREHOUS? OR DATA()(WAREHOUS? OR
                  MART? ? OR STORE? ? OR BASE OR BASES OR BANK? ? OR SYSTEM?) -
                  OR MDDB OR OODB OR DBMS
S4            9   S1(S)S2
S5            8   S4 AND S3
? show files
File 348:EUROPEAN PATENTS 1978-2005/Jun W04
         (c) 2005 European Patent Office
File 349:PCT FULLTEXT 1979-2005/UB=20050707,UT=20050630
         (c) 2005 WIPO/Univentio
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01091779   **Image available**
SPATIAL INTELLIGENCE SYSTEM AND METHOD
PROCEDE ET SYSTEME D'INTELLIGENCE SPATIALE
Patent Applicant/Assignee:
  METAEDGE CORPORATION, 1257 Tasman Drive, Suite C, Sunnyvale, CA 94089, US
    , US (Residence), US (Nationality)
Inventor(s):
  CHEN Li Wen, 7725 Oak Meadow Court, Cuptertino, CA 95014, US,
Legal Representative:
  DURDIK Paul A (et al) (agent), Squire, Sanders & Dempsey L.L.P., 600
    Hansen Way, Palo Alto, CA 94304-1043, US,
Patent and Priority Information (Country, Number, Date):
  Patent: WO 200413739 A2-A3 20040212 (WO 0413739)
  Application: WO 2003US24456 20030805   (PCT/WO US03024456)
  Priority Application: US 2002401268 20020805
Designated States:
(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)
  AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ
  EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR
  LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD
  SE SG SK SL SY TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW
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  (OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
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  Detailed Description
  Claims

English Abstract
  ...user's particular application requirements, deducing from the meta
  model(s) meta data, and populating **databases** with data objects in
  accordance with the meta data derived from the defined meta model...

Detailed Description
... user's particular application requirements, deducing from the meta
  model(s) meta data, and populating **databases** with data objects in
  accordance with the meta data derived from the defined meta model...

...of the present invention, a method
  is provided. The method comprises receiving a first schema **database**
  comprising
  information having at least one of a spatial component and a remaining
  component. Performing...

...in persistent, semi-persistent, or non-persistent storage in various
  applications.

  Aggregating data of the **database** into one or more groupings in
  accordance with
  the meta data is also part of...

derived attributes

...system I 00
for managing and analyzing information comprises a computer system 200,
coupled to **database** 101, a inetadata repository 106, and an optional
input/output device(s) 158, which can...

...like. In specific embodiments, metadata repository 106 may be combined
with or co-located with **database** 101. In some specific embodiments, one
or both of metadata repository 106 and **database** 1 0 1 may be located on
the computer system 200, while in alternative embodiments, one or both of
metadata repository 106 and **database** 1 0 1 may be located on another
computer system (not shown), which may be...

...embodiments, a network- may connect computer system 200 with a server
computer having access to **database** 1 0 1 and/or metadata repository
106, so that a client-server relationship is...

...processes resident on computer system 200
provides various functions to the user. For example, a **database**
interface software process 155 maintains the information in the **database**
101. A query/command generator software process 156 provides access to
the information in the **database** 101. A scheduler software process 154
coordinates the events and actions in the computer system...
...of the present invention. As shown by Fig. 4A, an architecture diagram
400 comprises of **database** 1 0 1 that contains information about a
business process in a specific embodiment. The **database** IO 1 contains a
plurality of data elements. The data contained within **database** 1 0 1
may be organized in a variety 1 0 of different ways, which may be called
schema. In a specific embodiment, **database** IO 1 is a relational
database . A physical model 401 conceptualizes relationships between
various data elements within **database** 1 0 1. Physical models, such as,
for example relational models, provide one or more...

...a customer, a 1 5 transaction, a product, and so forth, stored in the
relational **database** 1 0 1.

Representative examples of physical models will be described herein with
reference to...

...Fig. 4D. Physical model 401 is
representative of relationships between and among information within the
data warehouse 101. One or more virtual schemas, or subject models,
such as subject model 301 may...

...to represent the concepts underlying the physical
model 401. Subject model 301 comprises a reverse **star schema** (RSS)
relationship among a plurality of data elements stored in the **database**
101. Other
typesofvirtualseliemamaybeusedinvariousspecificembodiments. Subject
model 3 01 provides a way for users and consumers of the data in
database 1 0 1 to think about the relationships among the data in a
useful way...

...analyses. Logical model 201 provides a way for users and consumers of
the data in **database** 1 0 1 to view relationships between different data
elements in the **database** 1 0 1 in a
21
hierarchical way. Representative examples of logical models will be...

Fig. 4A can support a multiple subject system, in which different
applications run using the data stored in the database 1 0 1.

Accordingly, more than one subject model and more than one subject view
...

...301 comprises a plurality of
relationships between a plurality of groups and information entities in
database 1 0 1, as illustrated by logical model 20 1. Logical model 201
provides a...

...a specific embodiment, the entities comprising the derived subject model
3 01 have a reverse **star** **schema** arrangement, with the suspect entity
432 comprising a core component 420, as indicated by a...

...between entities of suspect, incident, and location that are
incorporated in information stored in the **database**
101. Inaspecificembodiment,thedatabaseisarelationaldatabase,however,
other methods of storing and retrieving information may be used in...

...attributes and profiles from static data based upon a virtual schema,
such as a reverse **star** **schema** , for example, and to create a **star**
schema , and, hence a multidimensional cube, dynamically.

The physical model 401 comprises a suspect entity 402...

...601 comprises a plurality of
relationships between a plurality of groups and information entities in
database 1 0 1, and illustrated by logical model 5 0 1, which provides a
location...
...In a specific embodiment, the entities comprising the derived subject
model 601 have a reverse **star** **schema** arrangement, with the location
entity 537 comprising a core component 520, as indicted by a...

...between entities of suspect, incidents, and locations that are
incorporated in information stored in the **database** 1 01. In a specific
embodiment, the **database** is a relational **database** , however, other
methods of storing and retrieving information may be used in various
other specific...As illustrated in flowchart 601 of Fig. 6A, the process
includes receiving a first schema **database** 602. Then, a virtual schema
is formed 604. The virtual schema includes at least a portion of a
dataset included within the first 3 0 **database** . A first input
indicating a criterion is received 606. Then, data of the **database** is
aggregated into one or more groupings in accordance with the virtual
schema and the...

...As illustrated in flowchart 609 of Fig. 6E, the process can provide
receiving a second **database** 642. A virtual schema including at least a
portion of a dataset included within the first **database** and the second
database can be formed 644. A first input indicating a criterion is
received 646. The data of the first **database** and/or the second
database may be aggregated into one or more groupings in accordance with
the virtual schema and...

...As illustrated in flowchart 611 of Fig. 6F, the process includes
receiving a first schema **database** comprising information having one or
both of a
spatial component and a remaining component 652...

...654. The geospatial pattern is stored as meta data 656.

20 The system of claim 19 wherein:
the source comprises at least one of a plurality of on line
1 5 transaction processing (OLTP) **databases** .
21 An apparatus, comprising:
means for generating one or more virtual schemas including at least...

...the meta data.
41
. A computer program product, comprising:
code for receiving a first schema **database** comprising information
having at least one of a spatial component and a remaining component;
code...

...code for storing the geospatial pattern as meta data;
code for aggregating data of the **database** into one or more
groupings in accordance with the meta data;
code for displaying one...

5/3,K/2   (Item 2 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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01008692   **Image available**
SPATIAL INTELLIGENCE SYSTEM AND METHOD
SYSTEME SPATIAL DE RENSEIGNEMENT ET PROCEDE CORRESPONDANT
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  TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
  (EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
  (OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
  (AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
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  Detailed Description
  Claims

JMB   Date: 13-Jul-05

English Abstract
...entities, and governmental entities. Specific embodiments provide
systems, methods, computer programs and apparatus for populating
databases (101) in accordance with the defined meta models (401) and
analyzing information having spatial components...

Detailed Description
... U.S. Nonprovisional Patent Application Serial No. 10/017,701,
entitled, "System For Providing A **Reverse   Star   Schema** Model,"
filed, December 14, 2001.

BACKGROUND OF THE INVENTION
The present invention relates generally to...entities, and governmental
entities. Specific embodiments provide systems, methods, computer
programs and apparatus for populating **databases** in accordance with the
defined meta models and analyzing information having spatial components
in a...of the present invention, a method is
provided. The method comprises receiving a first schema **database** .
Forming a virtual schema including at least a portion of a dataset
included within the first **database** is also part of the method. The
method also includes receiving a first input indicating a criterion.
Aggregating data of the **database** into one or more groupings in
accordance with the virtual schema and the first input...criterion is
also part of the method. The method can include aggregating data of the
database into one or more new groupings in accordance with the redefined
virtual schema and the...is also part of the method. The method can also
include aggregating data of the **database** into one or more new groupings
in accordance with the virtual schema and displaying one...

...of proximities, and the like.

In specific embodiments, the method further comprises receiving a
second **database** . A virtual schema including at least a portion of a
dataset included within the first **database** , the second **database** , or
both is formed. The method also includes receiving a first input
indicating a criterion. Aggregating data of the first **database** , the
second **database** , or both, into one or more groupings in accordance with
the virtual schema and the...method further comprises providing customer
centric information to a core of customer data within the **database** in
accordance with the virtual schema.

5 Specific embodiments can thereby provide maps of information...

...of the present invention, a
method is provided. The method comprises receiving a first schema
database . A virtual schema that includes at least a portion of a dataset
included within the first I 0 **database** is formed. The method also
includes receiving a first input indicating a criterion. A second ...one
or more regions may be received. The method also includes aggregating
data of the **database** into one or more groupings in accordance with the
virtual schema, the first input indicating...of data input from a source,
and generates mapping rules controlling data movement into a **data
warehouse**. A metadata repository holds the virtual schemas and mapping
rules. A **data   warehouse** builder, a spatial-object data repository, a
region checker and an n-dimensional presentation mechanism are also part
of the system. The **data   warehouse** is defined by at least a portion of
the data input, the virtual schemas, the...source. The apparatus also
includes means for generating mapping rules controlling data movement
into a **data   warehouse** and means for holding the virtual schemas and
mapping rules. Means for

generating one also included in the program product. As is code for
scheduling tasks for managing a **data   warehouse** . The program product
also includes code for pre-processing data for movement into the **data
warehouse** and code for managing creation of the **data   warehouse** . Code
for defining customer data analysis functions can be part of the program
product also...Code for translating entities from a meta model into a
data schema to form a **database** is also part of the computer program
product. Code for providing customer activity correlation queries with
access to a **database** of a **data   warehouse** can be included in the
program product as well. The program product also includes ...the
customer activity
6
components. The focal group and the customized group comprise a reverse
star   schema meta model.

Numerous benefits are achieved by way of the present invention over
conventional techniques...

...aware 5 infrastructure in which spatial entities and attributes may be
used in conjunction with **data   warehousing** and data mining techniques
to provide insight into business, technical, and governmental processes.
Specific embodiments according to the present invention bring spatial
data into the mainstream business world, the **data
warehousing** environment, and decision-support systems environments.
**Data
warehousing** applications in accordance with specific embodiments of the
present
invention can transform data into useful...embodiment of the present
invention.

7
Fig. 7 illustrates a conceptual diagram of a representative **database** in
a specific embodiment of the present invention.

Fig. 8 illustrates a conceptual diagram of...entities, and governmental
entities. Specific embodiments provide systems, methods, computer
programs and apparatus for populating **databases** in accordance with the
defined meta models and analyzing information having spatial components
in a...

...the term "information" refers to data, raw or processed, that can be
stored in a **database** , **data   mart** , or **data   warehouse** , for
example. The term "intelligence" refers to an understanding developed
from information, for example. ...in specific embodiments of the present
invention. As illustrated by Fig. IA, data from a **data   warehouse** 101
is provided to an information aggregator 102. The information aggregator
102 aggregates information from the **data   warehouse** IO 1 1 5 subject
to a criterion 103 for display on an n-dimensional...to dynamically
derive attributes and profiles from static data and virtual schemas to
create a **star   schema   database** , and, hence a multidimensional
geographic display of the static data, dynamically. Reference maybe had
to...

...copending U.S. patent application serial number 09/306,677, entitled,
"Method For Providing A **Reverse   Star   Schema** Model," to LiWen Chen,
et al., which is incorporated herein by reference in it entirety analyze
9
information. Specific embodiments provide **Reverse   Star   Schema** meta
models in which spatial-centric applications can be readily deployed.

However, the present invention of the aggregated data from the
information aggregator 102 based upon the spatial-object meta data
stored in spatial-object meta data repository 106.

In a specific embodiment, n-dimensional presentation 104...events.

In specific embodiments, one or more spatial extensions may be added
to objects in **data** **warehouse** 's IO 1 in order to make use of
geographical tools. Data objects may include...

...For example, attributes may be added to centric entities and/or activity
entities in the **data** **warehouse** IO 1, whenever you are using C-Insight
to import **database** objects to populate the repository.

Fig. IC illustrates a further representative spatial analysis system in
...plurality of relationships between the spatial analysis components
illustrated by Fig. IA, such as the **data** **warehouse** IO 1, information
aggregator 102, criterion 103, and n-dimensional presentation area 104.
As shown by Fig. IC, **data** **warehouse** comprises a plurality of
information entities, such as entities 402 and 507, for example,
associated in the **data** **warehouse** IO 1. Physical schemas 401 and 701
are described with reference to particular specific embodiments...

...more virtual schemas 601 and 301, that map various relationships between
information entities in the **data** **warehouse** IO 1 of interest to users.
Virtual
I I
schernas can be defined, redefined, or...

...suit the wants or desires of consumers of intelligence developed from
the information within the **data** **warehouse** 101. Fig. IC illustrates a
location centric virtual ...the core component 520. This type of
arrangement of information entities is termed a "Reverse **Star** **Schema**
." One or more derived attributes 97 may be determined from relationships
between non-location information entities and location information
entities within the **data** **warehouse** IO 1, of which location entity 93,
non-location entity 94 are illustrative. Derived attributes...

...transactions, occurrences, segmentations, profiles, calculations, and
the like deten-nined from the information in the **data** **warehouse** IO 1.
Derived attributes determined from information having a spatial
component, such as location entity...components in the virtual schema
601. The information can be stored in the spatial meta **data** **store**
106 in some specific embodiments. The region infon-nation can be used to
redefine segmentation the underlying information in the data warehouse IO
1.

Fig. IE illustrates a still further representative spatial analysis
system 5 in a...

...analyzer 107 provides aggregation of information from the analyzer 102
based upon the spatialobject meta **data** **stored** in the spatial meta
data repository 106. Region analyzer 107 can provide dynamic updating of
...a system 100 for managing and analyzing information comprises a
computer system 200, coupled to **database** I 0 1, ...like. In specific
embodiments, metadata repository 106 may be combined with or co-located
with **database** IO 1. In some specific embodiments, one or both of
metadata repository 106 and **database** 101 may be located on the computer
system 200, while in alternative embodiments, one or both
1 3

...of metadata repository 106 and database IO 1 may be located on another
computer system (not shown), which may be a...embodiments, a network may
connect computer system 200 with a server computer having access to
database IO 1 and/or metadata repository 106, so that a client-server 5
relationship is...

...processes resident on computer system 200
provide various functions to the user. For example, a **database**
interface software process 1 5 5 maintains the information in the
database IO 1. A query/command generator software process 156 provides
access to the information in the **database** 101. A scheduler software
process 154 ...of the present invention. As shown by Fig. 4A, an
architecture diagram 400 comprises of **database** IO 1 that contains
information about a business process in a specific embodiment. The
database 101 contains a plurality of data elements. The data contained
within **database** 101 may be organized in a variety of different ways,
which may be called schema. In a specific embodiment, **database** 101 is a
relational **database** . A physical model 401 conceptualizes relationships
between various data elements within **database** IO 1. Physical models,
such as, for example relational models, provide one or more relationships
stored in
16
the relational **database** 101. Representative examples of physical models
will be described herein with reference to specific embodiments...

...Fig. 4D. Physical model 401 is representative of relationships between
and among information within the **data** **warehouse** IO 1. One or more
virtual schemas, or subject models, such as subject model 301...

...to represent the concepts underlying the physical model 401. Subject
model 301 comprises a reverse **star** **schema** (RSS) relationship among a
plurality of data elements stored in the **database** IO 1. Other types of
virtual schema may be used in various specific embodiments. Subject model
301 provides a way for users and consumers of the data in **database** IO 1
to think about the relationships among the data in a useful way.
Representative data in **database** IO 1 to view relationships between
different data elements in the **database** 101 in a hierarchical way.
Representative examples of logical models will be described herein with
using the **data** **stored** in the **database** IO 1. Accordingly, more than
one subject model and more than one subject view may...301 comprises a
plurality of relationships between a plurality of groups and information
entities in **database** 101, as illustrated by logical model 201. Logical
model 201 provides a suspect centric view...In a specific embodiment, the
entities comprising the derived subject model 301 have a reverse **star**
schema arrangement, with the suspect entity 432 comprising a core
component 420, as indicated by a...between entities of suspect, incident,
and location that are incorporated in information stored in the **database**
IO 1. In a specific embodiment, the **database** is a relational **database**
, however, other methods of storing and retrieving information may be
used in various other specific...attributes and profiles from static data
based upon a virtual schema, such as a reverse **star** **schema** , for
example, and to create a **star** **schema** , and, hence a multidimensional
cube, dynamically.

The physical model 401 comprises a suspect entity 402...601 comprises a
plurality of relationships between a plurality of groups and information
entities in **database** IO 1, and illustrated by logical model 5 0 1,
which provides a location centric...In a specific embodiment, the
entities comprising the derived subject model 601 have a reverse **star**
schema arrangement, with the location entity 1 5 537 comprising a core

component 520, as indicted between entities of suspect, incidents, and
locations that are incorporated in information stored in the **database**
23
. In a specific embodiment, the **database** is a relational **database**,
however, other methods of storing and retrieving information may be used
in various other specific...As illustrated in flowchart 601 of Fig. 6A,
the process includes receiving a first schema **database** 602. Then, a
virtual schema is formed 604. The virtual schema includes at least a
portion of a dataset included within the first **database**. A first input
indicating a criterion is received 606. Then, data of the **database** is
aggregated into one or more groupings in accordance with the virtual
schema and the...As illustrated in flowchart 609 of Fig. 6E, the process
can provide receiving a second **database** 642. A virtual schema including
at least a portion of a dataset included within the first **database** and
the second **database** can be formed 644.

A first input indicating a criterion is received 646. The data of the
first **database** and/or the second **database** may be aggregated into one
or more groupings in
26
accordance with the virtual schema...on an n-dimensional presentation
649.

Fig. 7 illustrates a conceptual diagram of a representative **database** in
a 5 specific embodiment of the present invention. The **database** IO 1 in
Fig. 7 includes a data object 702. Data object 702 includes an...

...is merely illustrative of the many different ways to represent
information having spatial components in **databases** and data structures
for use with a computer system.

Fig. 8 illustrates a ...A screen 802 in Fig. 8 comprises a plurality of
fields for receiving information about **data base** tables, spatial and
other information components and the like. For example, columns such as
community...

...course, Fig. 8 is merely illustrative of the many ways to represent
information in a **database** or data structure to a user.

Figs. 9A-9B illustrate representative example map presentation in...
locations. More modern approaches permit police to produce more versatile
electronic maps by combining their **databases** of reported crime
locations with digitized maps of the areas they

Claim
  I A method, comprising:
  receiving a first schema **database** ;
  forming a virtual schema including at least a portion of a dataset
  included
  within the first **database** ;
  receiving a first input indicating a criteria;
  aggregating data of the **database** into one or more groupings in
  accordance
  with the virtual schema and the first input...object meta data
  comprises:
  receiving a third input indicating a criteria;
  aggregating data of the **database** into one or more new groupings in
  accordance with the redefined virtual schema and the...

  ...the n-dimensional presentation;

reflecting the relationship in the virtual schema;
aggregating data of the **database** into one or more new groupings in
accordance with the virtual schema; ...an n-dimensional presentation.

17 The method of claim 1, further comprising:
receiving a second **database** ;
1 5 forming a virtual schema including at least a portion of a dataset
included
within at least one of the first **database** and the second **database** ;
receiving a first input indicating a criteria;
aggregating data of at least one of the first **database** and the second
database into one or more groupings in accordance with the virtual
schema and the first
input...1, further comprising:
providing customer centric information to a core of customer data within
the **database** in accordance with the virtual schema.

20 A method, comprising:
receiving a first schema **database** ;
forming a virtual schema including at least a portion of a dataset
included
within the first **database** ;
receiving a first input indicating a criteria;
receiving a second input indicating one or more regions;
34
aggregating data of the **database** into one or more groupings in
accordance with the virtual schema, the first input indicating...

...of data input from a source, and generates mapping rules controlling
data
movement into a **data   warehouse** ;
a metadata repository operative to hold the virtual schemas and mapping
 rules;
a **data   warehouse** builder;
a spatial-object data repository;
a region checker; and
an n-dimensional presentation;
wherein the **data   warehouse** is defined by at least a portion of the
data
input, the virtual schemas, the...

...the source comprises at least one of a plurality of on line transaction
processing (OLTP) **databases** .

23 An apparatus, comprising:
means for generating one or more virtual schemas including at least...

...data input from a source;
means for generating mapping rules controlling data movement into a **data**

   warehouse ;
means for holding the virtual schemas and mapping rules;
means for generating one or more...

...for generating customer data analysis function code;
35
code for scheduling tasks for managing a **data   warehouse** ;
code for pre-processing data for movement into the **data   warehouse** ;
code for managing creation of the **data   warehouse** ;
code for defining customer data analysis functions;

code for performing data source analysis,
code for translating entities from a meta model into a data schema to
form
1 5 a **database** ;
code for providing customer activity correlation queries with access to a
database of a **data** **warehouse** ;
code for providing customer data analysis functions;
code for providing analysis results to at least...the customer activity
components;
wherein the focal group and the customized group comprise a reverse **star**

schema meta model.
36

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5/3,K/3 (Item 3 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00948082 **Image available**
METHOD AND SYSTEM FOR DECISION SUPPORT ANALYSIS
PROCEDE ET SYSTEME D'ANALYSE D'AIDE A LA DECISION
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  TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
  (EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
  (OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
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  Detailed Description
  Claims

English Abstract
  ...also includes mapping at least one relationship among the first
  plurality of information in the **database** based upon the first physical
  model (1104). Dynamic attributes and profiles can be derived (1105...

Detailed Description

... improvement exist. For example, according to conventional
technologies, modeling of data is done using rudimentary **database**
relationship diagrams. While these diagrams explain the information in a
manner understandable to **database** system programiners and other such
persons having a
technical background, these methods are not convenient...business or
other non-technical fields understand and manipulate relationships
between various data entities in **databases** , for example.

Various applications are supported by specific embodiments.
Multidimensional models, statistical computations, rule based...comprises
a
computer; an information store, operable to contain the data; a metadata
repository, a **database** interface software process that maintains the
data in the information store; a query/ ...a user interface software
process that controls input to and output from the metadata. repository,
database interface
software process, the query/command generator software process, and the
scheduler.
In a further...are related by a first subject model. In a specific
embodiment, the computer memory has **data** **stored** thereon, which
ftirther comprises a second central concept entity; a second static
attribute
3
entity...or
more commands based upon the metadata information. Then the commands are
sent to a **database** , and the information received from the **database**
responsive to the one or more commands is provided to one or more ...
also part of the product. Further, code sends the one or more commands
to a **database** ; and code that provides information received I 0 from the
database responsive to the one or more cominands to one or more
applications; are also part...upon the metadata information. The
processor also sends the one or more commands to a **database** and
provides information received from the **database**
responsive to the one or more commands to one or more applications. The
processor also...reports from a result of one or more applications acting
upon
information received from a **database** responsive to one or more commands
created based upon a inetadata information retrieved from a...

...with business or other nontechnical fields understand and manipulate
relationships between various data entities in **databases** , for example.
Various applications are supported ...business or other non-technical
fields understand and manipulate relationships between various data
entities in **databases** , for example.

Fig. I illustrates a representative software architecture capable of
supporting a decision support...

...present invention. As shown by Fig. 1, an architecture diagram I 00
comprises of a **database** 1 0 1 that contains information about a
business process in a specific embodiment. The **database** 1 0 1 contains
a plurality of data elements. The data contained within **database** IO 1
may be organized in a variety of different ways,
which may be called schema. In a specific embodiment, **database** 101 is a
relational **database** . Relationships between various data elements within
database IO 1 are conceptualized by a physical model 102. Physical
models, also known as
relational...

...such as a customer, a transaction, a product, and so forth, stored in
the relational database IO 1. ...or more subject models, such as
8
subject model 103. Subject model 103 comprises a **reverse   star   schema**
(RSS) relationship among a plurality of data elements stored in the
database 1 0 1.

Subject model 103 provides a way for users and consumers of the data in
database 1 0 1 to think about the relationships among the data in a
useful way...business analyses. Logical models provide a way for users
and consumers of the data in **database** I 0 1 to view relationships
between different data elements in the **database** IO 1 in a hierarchical
way. Representative examples of logical models will be described ...
multiple subject system, which is an envirom-nent in which different
applications run using the **data   stored** in the **database** 101.
Accordingly, more than one subject model '103 and more than one subject
view 104...301 comprises a plurality of relationships between a plurality
of groups and information entities in **database** 1 0 1, as illustrated by
logical model 201. Logical model 201 provides a customer...a specific
embodiment, the entities comprising the derived subject model 3 01 have a
reverse **star   schema** arrangement, with the customer entity 3 02 1 5
comprising a core component 320, as...between entities of customer,
transaction, and product that are incorporated in information stored in
the **database**
1 1
01. In a specific embodiment, the **database** is a relational **database** ,
however, other methods of storing and retrieving information may be used
in various other specific...601 comprises a plurality of relationships
between a plurality of groups and information entities in **database** IO
1, and illustrated by logical model 501, which provides a product centric
view. The...In a specific embodiment, the entities comprising the derived
subject model 601 have a reverse **star   schema** arrangement, with the
product entity 607 comprising a core component 620, as indicted by a...
between entities of customer, transaction, and product that are
incorporated in information stored in the **database** IO 1 in Fig. 1. In a
specific embodiment, the **database** is a relational **database** , however,
other methods of storing and ...a specific embodiment has 3-dimensions,
is used to depict relationships among data in the **database** IO 1.
Display 801 has dimensions of a customer average spending level, which
comprises four...

...the zdirection. A total purchase information is a fact represented by
graphing data in the **database** IO 1 according to the dimensions x, y,
and z that have been selected.

Accordingly...a system 901 for managing and analyzing information
comprises a computer system 902, coupled to **database** 1 0 1, a metadata,
repository 91 0, and an optional input/output device(s located with
database 1 0 1.

I 0 In some specific embodiments, one or both of metadata repository 9 1
0 and **database** 1 0 1 may be located on the computer system 902, while
in alternative embodiments, one or both of metadata repository 910 and
database 101 may be
located on another computer system (not shown), which may be a server...

...network may connect 1 5 computer system 902 with a server computer
having access to **database** IO 1 and/or metadata repository 9 1 0, so
that a client-server ...processes resident on computer system 902

provide various functions to the users. For example, a database
interface software '20 process 905 maintains the information in the
database 101. A query/command generator software process 906 provides
access to the information in the database I 0 1. A scheduler software
process 904 coordinates the events and actions in the...specific
embodiment of the present invention. As shown in Fig. 10, in a specific
embodiment, database
1 7
holds business data. ...of the physical schema (not shown) of the
relationships in the inforination contained in the database 101. A
plurality of subject views are provided by logical models 104, such as
logical cube shape, enable business decision makers to analyze the
information of database 1 0 1 as conceptualized by the logical models
104. Data mining is another application various views and models based
upon the information in the database 1 0 1. Computer system 902 may
also manage the information in the database 1 0 1, and perform
searches of the database 101 in a specific embodiment. In some specific
embodiments, computer system 902 is connected to creating models of
information in a database and reducing the models to metadata, for
example. Specific embodiments such as the representative specific...also
includes mapping at least one relationship among the first plurality of
information in the database based upon the first physical model (1
104). Optionally, a check can be performed in...also includes mapping at
least one relationship among the first plurality of information in the
database based upon the first physical model (I 104). Then, dynamic
attributes and profiles can be...also includes mapping at least one
relationship among the first plurality of information in the database
based upon the first physical model (I 104). Then, dynamic attributes and
profiles can be...to process data based upon the metadata (1 122). These
commands are sent to the database 101 (I 123). Information retrieved
from the database 1 0 1 responsive to the commands is passed to
applications for ftirther processing (I...well as, extend types of
access, or views, to the information available to a financial data
mart 121 0 and a marketing data mart 1212. For example, the
marketing data mart 1212 may initially contain customer response
information for a marketing campaign based upon product category...

Claim
... for managing data, comprising:
a computer;
an information store, operable to contain said data;
a database interface software process that maintains said data in
said information ...user interface software process that controls input
to and output
from said metadata. repository, said database interface software
process, said query/command generator software process, and said
scheduler.
24
. A computer...said
metadata information;
sending said at least one of a plurality of commands to a database ;
providing information received from said database responsive to
said at least one of a plurality of commands to at least one...metadata
information;
code sends said at least one of a plurality of commands to a
 database ;
code that provides information received from said database
responsive to said at least one of a plurality of commands to at least
one...said metadata information; send said at least one of a plurality of
commands to a database ; provide information received from said

database

   responsive to said at least one of a plurality of commands to at least
   one...of at least one of a plurality of applications acting upon
   information received from a **database** responsive to at least one of a
   plurality of commands created based upon a metadata...

   5/3,K/4   (Item 4 from file: 349)
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00893388   **Image available**
METHOD AND SYSTEM FOR MANAGING EVENT ATTRIBUTES
PROCEDE ET SYSTEME DE GESTION D'ATTRIBUTS D'EVENEMENTS
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  Application: WO 2001US29801 20010924   (PCT/WO US0129801)
  Priority Application: US 2000235390 20000925; US 2000235373 20000925; US
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  TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
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  (OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
  (AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
  (EA) AM AZ BY KG KZ MD RU TJ TM
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Fulltext Availability:
  Detailed Description
  Claims

English Abstract
  ...techniques for managing and analyzing business information (100)
  comprising a computer system (102), coupled to **database** (101), a
  metadata respository (110). Specific embodiments provide persons with
  business or other non-technical...

...enhanced understanding of information, and greater capabilities to
  manipulate relationships between various data entities in databases ,
  for example.

Detailed Description
... improvement exist. For example, according to conventional
  technologies, modeling of data is done using rudimentary **database**
  relationship diagrams. While these diagrams explain the information in a

manner understandable to database system programmers and other such
persons having a
technical background, these methods are not convenient...

...business or other non-technical fields understand and manipulate
relationships between various data entities in **databases** , which
represent events and information about events. Event based information
can provide the business decision...

...or more events form a graph. The method farther includes creating a
query to a **database** based upon the graph.

In a specific embodiment, the method further comprises receiving
an input indicating a filter expression for information in said **database**
and storing said filter expression in said at least one node for each of
said...

...fat-ther comprises receiving an input indicating an event duration
expression for information in said **database** and storing said event
duration expression in said at least one edge for each of...

...a graph. The computer program product also includes code that creates a
query to a **database** based upon the graph and a computer readable
storage medium for holding the codes.

1...

...of events form a graph. The processor is operative to create a query to
a **database** based upon the graph.

In a representative embodiment, a method for managing
...system comprises, for example, a computer; an information store,
operable to contain the data; a **database** interface software process
that maintains the data in the inforrnation store; a inetadata
repository; and...

...or other non-technical fields to understand and manipulate relationships
between various data entities in **databases** , for example. Various
applications are supported by
specific embodiments. For example, multidimensional models, statistical
computations...enhanced understanding of information, and greater
capabilities to manipulate relationships between various data entities in
databases , for example.

The following definitional list contains terms that will be used
herein to describe...

...the reader and is not intended to limit the present invention to any
particular embodiment.

Reverse   Star   Schema : A **Reverse   Star   Schema** is a subject
focused data model in which a business subject comprises a focal point...

...event data related to the subject is organized in relation to the focal
point. A **Reverse   Star   Schema** can comprise a federated **star**
schema that can evolve and grow to include more embedded **star   schema**

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Cube: An n-dimensional data set depicting one or more

...relationships among data in a database. Each cube can be unfolded to
reveal component dimensions and fact tables. The fact tables...

...has an understanding of an enterprise's
data. The data may be contained within a **data** **warehouse** , for example,
or
distributed throughout the enterprise. The designer can define **database**
schemas, such as a Reverse **Star** **Schema** , for example, as well as
attributes, profiles, cubes, 5 jobs, maintenance policies, and the like
...

...The business user can define reports, cubes, profiles, segmentation
codes based on a given Reverse **Star** **Schema** and the like, but may be
isolated from defining/modifying the **Reverse** **Star** **Schema** . Business
users can also generate target customer sets using a Window interface.

End Users: An...system I 00 for managing and analyzing information
comprises a computer system 102, coupled to **database** 101, a metadata
repository I 10, and an optional input/output device(s) 108, which...

...In specific embodiments, metadata repository I 10 may be combined with
or co-located with **database** 101.

In some specific embodiments, one or both of metadata repository 1 1 0
and **database** 1 0 1 may be located on the computer system 102, while in
alternative embodiments, one or both of metadata repository 1 1 0 and
database IO 1 may be
located on another computer system (not shown), which may be a...

...embodiments, a network may connect computer system 102 with a server
computer having access to **database** 1 0 1 and/or
10
metadata repository 1 1 0, so that a client...

...and/or a combination of hardware and software in various specific
embodiments. For example, a **database** interface logic 105 maintains the
information in the **database** IO 1. A query/command generator logic 106
provides access to the information in the **database** 101. A scheduler
logic 104 coordinates the events and actions in the computer system 102
...comprise a CCDW
Model 340, and a DBWrapper 342. These processes provide interface to the
database IO 1 of Fig. 1.
Fig. 3B illustrates representative software architecture in another
specific embodiment...

...a CCDWModaI 380, and a CIDBAccess
module 3 82. These processes provide interface to the **database** IO 1 of
Fig. 1.

Fig. 4A illustrates a representative application information
architecture capable of...

...of the present invention. As shown by Fig. 4A, an architecture diagram
400 comprises of **database** 1 0 1 that contains information about a
business process in a specific embodiment. The **database** IO 1 contains a
plurality of data elements. The data contained within **database** 1 0 1
may be organized in a variety
of different ways, which may be called schema. In a specific embodiment,
database 101 is a relational **database** . A physical model 401
conceptualizes relationships between various data elements within

database 1 0 1 Physical models such as for example relational models
provide one or more...

...such as a customer, a transaction, a product, and so forth, stored in
the relational **database** 1 0 1. Representative examples of physical
models will be described herein with reference to...

...or more subject models, such as subject model 301. Subject model 301
comprises a reverse **star** **schema** (RSS) relationship among a plurality
of data elements stored in the **database** IO 1.

Subject model 3 01 provides a way for users and consumers of the data in
database 1 0 1 to think about the relationships among the data in a
useful way...

...analyses. Logical model 201 provides a way for users and consumers of
the data in **database** IO 1 to view relationships between different data
elements in the **database** 1 0 1 in a hierarchical way. Representative
examples of logical models will be described...

...Fig. 4A can support a multiple subject system, in which different
applications run using the **data** **stored** in the **database** 1 0 1.
Accordingly, more than one subject
model and more than one subject view...301 comprises a plurality of
relationships between a plurality of groups and information entities in
database 101, as illustrated by logical model 201. Logical model 201
provides a customer centric view...

...a specific embodiment, the entities comprising the derived subject model
3 01 have a reverse **star** **schema** arrangement, with the customer entity
432 comprising a core component 420, as indicted by a...

...between entities of customer, transaction, and product that are
incorporated in information stored in the **database** 1 0 1 - In a
specific embodiment, the **database** is a relational **database** , however,
1 6
other methods of storing and retrieving information may be used in
various...Analysis Processing (OLAP) technology, for example.

A business user can interface with information in the **database** via
the Business User Interface. After the user logs in, a determination is
made which...

...each cube report, including cube reports in a designer interface, are
kept in the repository **database** .

Fig. 7A illustrates a representative business report definition screen
in a specific embodiment of the...business user can generate new cubes,
or modify existing cubes
based upon information in the **database** via the Business User Cube
Constructor Interface. A Designer or a Business User can create...

...security level for each report, including cubes in designer interface,
are kept in the repository **database** .

24
In specific embodiments, the user can generate a new report by
adding, and/or...to an icon 1203 in the action list panel 1204, the
system will query the **database** IO 1 to retrieve a list of customers
that satisfy the profile value set 1201...

list of customer with the personalized e-mail contents I 0 retrieved
from the customer **database** 1 0 1.

EVENT ATTRIBUTES
For example, consider a representative example situation in which.

a...model 1700 comprises a plurality of nodes and connections. Nodes
represent information in tables of **database** IO 1. Connections represent
relationships between the nodes. An event node 1702 comprises a
description...

Claim
... of
  said plurality of events form a graph; and
  thereupon creating a query to a **database** based upon said graph.
  1 5

  2 The method of claim 1, further comprising:
  receiving an input indicating a filter expression for information in
  said **database** ; and
  storing said filter expression in said at least one node for each of
  said...

...1, further comprising:
  receiving an input indicating an event duration expression for
  information in said **database** ; and
  42
  storing said event duration expression in said at least one edge for
  each...

...for managing data, comprising:
  a computer;
  an information store, operable to contain said data;
  a **database** interface software process that maintains said data in
  said information store;
  a metadata repository; and...

...form a graph; and thereupon said processor is operative to create a
  query to a **database** based upon said graph.

  14 The apparatus of claim 13, wherein:
  said processor is further operative to receive an input indicating a
  filter expression for information in said **database** ; and store said
  filter expression in said at least one node for each of said...

...further operative to receive an input indicating an
  event duration expression for information in said **database** and store
  said event duration expression in said at least one edge for each of...
  data, comprising:
  a computer;
  an information store, operable to contain said data;
  I 0 a **database** interface software process that maintains said data in
  said information store;
   metadata repository; and
   web...

5/3,K/5   (Item 5 from file: 349)
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00749381
62 HUMAN SECRETED PROTEINS
SOIXANTE-DEUX PROTEINES HUMAINES SECRETEES
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  GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA
  MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA
  UG US UZ VN YU ZA ZW
  (EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
  (OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
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  (EA) AM AZ BY KG KZ MD RU TJ TM
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Fulltext Availability:
  Detailed Description
  Claims

... translated. These regions are often referred to as "low complexity"
regions.

Such regions can cause **database** similarity search programs such as
BLAST to find high-scoring sequence matches that do not...tissues.

Many polynucleotide sequences, such as EST sequences, are publicly
available and accessible through sequence **databases** . Some of these
sequences are related to SEQ ID NO: I I and may have...tissues.

Many polynucleotide sequences, such as EST sequences, are publicly
available and accessible through sequence **databases** . Some of these
sequences are related to SEQ ID NO: 12 and may have been...

...healing.

Many polynucleotide sequences, such as EST sequences, are publicly
Hable and accessible through sequence **databases** . Some of these
sequences are
aval
related to SEQ ID NO: 13 and may have...tissues.

Many polynucleotide sequences, such as EST sequences, are publicly
available and accessible through sequence **databases** . Some of these
sequences are related to SEQ ID NO: 14 and may have been...tissues.
Many polynucleotide sequences, Such as EST sequences, are publicly
Hable and accessible through sequence **databases** . Some of these
sequences are
aval
related to SEQ ID NO: 15 and may have...

...disorders.

Many polynucleotide sequences, such as EST sequences, are publicly
available and accessible through sequence **databases** . Some of these
sequences are related to SEQ ID NO: 16 and may have been...disorders.

Many polynucleotide sequences, such as EST sequences, are publicly
available and accessible through sequence **databases** . Some of these
sequences are related to SEQ ID NO: 17 and may have been...

...tissues.

Many polynucleotide sequences, such as EST sequences, are publicly
available and accessible through sequence **databases** . Some of these
sequences are related to SEQ ID NO: 18 and may have been...ailments.
Many polynucleotide sequences, such as EST sequences, are publicly
available and accessible through sequence **databases** . Some of these
sequences are related to SEQ ID NO: 19 and may have been...Many
polynucleotide sequences, such as EST sequence s, are publicly
available and accessible through sequence **databases** . Some of these
sequences are related to SEQ ID NO:20 and may have been...

...tissues.

Many polynucleotide sequences, such as EST sequences, are publicly
available and accessible through sequence **databases** . Some of these
sequences are related to SEQ ID NO:21 and may have been...tissues.

Many polynucleotide sequences, such as EST sequences, are publicly
Hable and accessible through sequence databases. Some of these
sequences are
aval
related to SEQ ID NO:71 and may have...tissues.

Many polynucleotide sequences, such as EST sequences, are publicly
Hable and accessible through sequence **databases** . Some of these
sequences are
aval.
related to SEQ ID NO:72 and may have...sequence, which are not
matched/aligned, as a percent of the total bases of the **query** sequence.
Whether a nucleotide is matched/aligned is determined by results of the
FASTDB sequence...

Claim
... documentation to the extent that such documents are included in the
fields searched
NONE
Electronic **data** **base** consulted during the international search (name
of **data** **base** and, where practicable, search terms used)
WEST, CAS ONLINE, MEDLINE
C. DOCUMENTS CONSIDERED TO BE...

 5/3,K/6   **(Item 6 from file: 349)**
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00743943   **Image available**
METHOD FOR DYNAMIC CUSTOMER PROFILING IN DATABASE
**PROCEDE PERMETTANT D'ETABLIR LE PROFIL DYNAMIQUE D'UN CLIENT DANS UNE BASE
    DE DONNEES**
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  FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU
  LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT
  TZ UA UG UZ VN YU ZA ZW
  (EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
  (OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
  (AP) GH GM KE LS MW SD SL SZ TZ UG ZW
  (EA) AM AZ BY KG KZ MD RU TJ TM
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METHOD FOR DYNAMIC CUSTOMER PROFILING IN DATABASE
Fulltext Availability:
  Detailed Description
  Claims

English Abstract
  According to the present invention creating and accessing customer
  information (402) in a **database** , **data** **mart** or **data** **warehouse** ,
  segmenting customer information into one or more groups of customers
  (404), having one or more...

Detailed Description
  METHOD FOR DYNAMIC CUSTOMER PROFILING IN **DATABASE**
  CROSS-REFERENCES TO RELATED APPLICATIONS
  This application claims priority from the following U.S. Provisional...

...filed March 23, 1999.

  BACKGROUND OF THE INVENTION
  The present invention relates generally to computer **database** systems,
  and specifically to methods for visualizing information from a **data**
  warehousing environment.

  Few could foresee the rapid development of computer technology just a
  few years ago...

...an ever increasing portion of our daily lives, governments, businesses
  and individuals have turned to **database** technology to help them manage
  the "information explosion," the exponential proliferation of information
  that must be sorted, assimilated and managed on a continuing basis. One
  area of importance to the **database** design field is data model selection
  for **database** applications.
  A data model represents the structure or organization of **data** **stored**
  in the **database** . It enables the use of data in certain forms and may
  limit the data being...

...Many different data models can exist, and they usually differ markedly
  from one another. Typically, **database** applications are customized to a
  particular data model of a particular **database** .

  Usually, these applications must be re-implemented for every **database** ,
  even though the functioning of the application remains the same.

  Presently, **database** developers have turned to **data** **warehousing**
  technology to resolve often conflicting data management requirements.
  Traditional **data** **warehousing** approaches focus on decision support
  applications, which emphasize summarized information. While perceived
  advantages exist, an...

...analyses techniques can be improved over traditional approaches by
  methods for displaying analysis results and **database** content to the
  user.

  What is needed is a method for analyzing customer data contained in
   databases , **data** **marts** and **data** **warehouses** .

  SUMMARY OF THE INVENTION
  According to the invention, techniques for profiling of human behavior
  1 0 based upon analyzing data contained in **databases** , **data** **marts**

...from a variety of sources in order to provide visual representations of data in a **data** **warehousing** environment.

A first aspect in accordance with the present invention provides a method for creating a customer profile from customer information. The customer information can be stored in a **database** , multiple **databases** , a **data** **mart** or a **data** **warehouse** , for example.

The customer information can comprise one or more attributes. Attributes can include age...

...Receiving can be by means of direct input, or by accessing data in a legacy **database** , for example. Segmenting the customer information into one or more groups, or segments, based upon...according to the present invention provide frameworks for users to create and manage customer centric **data** **warehouses** having a wide variety of data models such as a **star** **schema** data model, a **reverse** **star** **schema** data model and the like.

Such **data** **warehouses** can avail themselves of analytical functions such as Market Basket Analysis (MBA), Regency/Frequency/Monetary...

...user interfaces (GUI) that enable users to define segmentation schemes for customers and then generate **database** data based upon the segmentation. This **database** data can then be incorporated into the **data** **warehouse** for use in additional analysis by the user. Some specific embodiments can also include tools...

...such as OLAP tools, for example. In this representative example, the bank can produce a **data** **warehouse** having profiling information that is suitable for viewing using popular visualization tools such as OLAP...

...provided by the segmentation assignment into a one or more profiles. For example, a representative **database** can include an age attribute for each customer.
Table I illustrates a particular embodiment in...scope of the present invention.

A data model represents an organization of data in a **database** . Choice of a data model facilitates the use of data in certain ways and may...

...applications typically require different data models that are usually quite different from one another. Thus, **database** applications are typically customized to the data model used by the **database** . These applications can be implemented for
8
 databases having different data models even though the underlying logic of the application may be similar...

...code; and 3) the usefulness of the application when using a particular specialized data model.

 Database applications can be written to conform to a meta model and refer to the detailed combination that can be useful in **data** **warehouse** applications. In this combination, the star schema comprises a "universal data model" and the multidimensional model comprises a meta model.

B C C Customer Profiling
Profiles
    -:gg
    'g
    E3 Codei
    NYA...
...3
    77@
    @ I MM
    ....
    Console Root
    21 CCDWSnapIn x@
    B demo
    IH: I Customer Centric **Data   Warehouse**
    Mi-D Customer Intelligence Analysis
    j
    B Customer Profiling
    B-C3 Profiles
    M+.-.C] Profit...

...to the extent that such documents are included in the fields searched
    IEEE, ACM
    Electronic **data   base** consulted during the international search (name
    of **data   base** and, where practicable, search terms used) Pleaw See
    Extra Sheet.
    C. DOCUMENTS CONSIDERED TO BE...

...61 10-11t 16-19t 229 26-28@ 35-39@ 42-"
    ·B. FIELDS SEARCHED
    ElectroRic **data   bases** consuked (Nium of **data   base** and where

    practicable terms used): AkaVista, Google, WEST 2. O. Search Toms:
    databases , data   warehouse , data man, data mining, customers or
    users, profile attribute, segmenting or segments, groups, partition or...

 5/3,K/7   (Item 7 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00579159   **Image available**
METHOD FOR PROVIDING A REVERSE   STAR   SCHEMA **DATA MODEL**
**PROCEDE   PERMETTANT   DE REALISER UN MODELE DE DONNEES POUR SCHEMA EN ETOILE
     INVERSEE**
Patent Applicant/Assignee:
  METAEDGE CORPORATION,
  CHEN Li-Wen,
  ORTIZ Juan J,
Inventor(s):
  CHEN Li-Wen,
  ORTIZ Juan J,
Patent and Priority Information (Country, Number, Date):
  Patent: WO 200042532 A1 20000720 (WO 0042532)
  Application: WO 2000US906 20000113 (PCT/WO US0000906)
  Priority Application: US 99116086 19990115; US 99306677 19990506; US
     99306650 19990506; US 99306693 19990506
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prior to 2004)
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Publication Language: English
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METHOD FOR PROVIDING A REVERSE STAR SCHEMA **DATA MODEL**
Fulltext Availability:
  Detailed Description
  Claims

English Abstract
  According to the invention, techniques for organizing information from
  systems in a **data warehousing** environment are provided. In an
  exemplary embodiment, the invention provides a method for analyzing data
  ...

...to the invention can translate data from a variety of sources (203, 204)
  to particular **database** schema in order to provide organization
  (200-204) to a **data warehousing** environment.
Detailed Description
  METHOD FOR PROVIDING A REVERSE **STAR SCHEMA** DATA
  MODEL
  CROSS-REFERENCES TO RELATED APPLICATIONS
  This application claims priority from the following U...

...Li-Wen Chen
  entitled, "METHOD AND APPARATUS FOR PERFORMING CUSTOMER DATA
  ANALYSIS OF A COMPUTER **DATABASE** USING REVERSE **STAR SCHEMA**
  DATA MODEL," (Attorney Docket Number 19608-OOO I OOUS) filed January
  15,1999.

  The following...

...Application Serial No. Li-Wen Chen and
  Juan Ortiz entitled, "METHOD FOR PROVIDING A REVERSE **STAR SCHEMA**
  DATA MODEL," (Attorney Docket Number 19608-0001 I OUS);
  2. U.S. Patent Application Serial No. Li-Wen Chen
  entitled, "APPARATUS FOR PROVIDING A **REVERSE STAR SCHEMA** DATA
  MODEL," (Attorney Docket Number 19608-000120US); and
  3. U.S. Patent Application Serial No. Li-Wen Chen
  entitled, "SYSTEM FOR PROVIDING A **REVERSE STAR SCHEMA** DATA
  25 MODEL," (Attorney Docket Number 19608-000130US).

  BACKGROUND OF THE INVENTION
  The present invention relates generally to computer **database** systems,
  and specifically to methods for organizing information from one or more
  systems in a...

...an ever increasing portion of our daily lives, governments, businesses
  and individuals have turned to **database** technology to help them manage
  the "information explosion," the exponential proliferation of information
  that must be sorted, assimilated and managed on a continuing basis. One
  area of importance to the **database** design field is data model selection
  for **database** applications.

  A data model represents the structure or organization of **data stored**
  in the **database** . It enables the use of data in certain forms and may

...Many different data models can exist, and they usually differ markedly
from one another. Typically, **database** applications are customized to a
particular data model of a particular **database** .
Different **database** vendors base their products on different data
models, adding to the confusion. Usually, these applications must be
re-implemented for different **databases** , even though the functioning of
the application remains the same.

Presently, **database** developers have turned to **data** **warehousing**
technology to resolve often conflicting data management requirements.
Traditional **data** **warehousing** approaches focus on decision support
applications, which emphasize summarized information. While perceived
advantages exist, an...

...usually loses the detail level of information about customer identity,
limiting the usefulness of traditional **data** **warehousing** approaches in
these types of applications.

What is needed is a method for providing a **database** that can be
customized to fit individual user needs, yet also able to support data...

...invention, techniques for organizing information from a
variety of sources, including legacy systems, in a **data** **warehousing**
environment are provided. In an exemplary embodiment, the invention
provides a method for analyzing data...
...Embodiments according to the invention can translate data from a variety
of sources to particular **database** schema in order to provide
organization to a **data** **warehousing** environment.

The method includes a variety of steps, such as providing a model for an
...

...data organization can include data schema and the like. Data schema
define aspects of the **database** , such as attributes, domains and
parameters, and the like, to a **database** management system (**DBMS**). The
1 5 method also includes creating one or more **databases** for containing
the data. Translating data from one or more sources to the data
organization is also part of the method. A step of incorporating data
into the **database** is part of the method. The method can also include a
step of performing analysis on the data in the **database** . Accordingly,
the combination of these steps can provide an environment for analyzing
information about customers, business processes and the like.

In another aspect of the present invention, techniques for **data**
warehousing are provided. In a particular embodiment, the invention
provides a met hod for creating a **database** for organizing information
from one or more sources. Embodiments can organize the data in the
database according to a data schema, such as a reverse **star** **schema** .
A **reverse** **star** **schema** model comprises an identity element (e.g.,
core components, and the like) and one or...in source tables and primary
and foreign keys. A step of creating one or more **databases** from the
schema is also part of the method. The **database** can be a customer **data**
warehouse , and the like. Creating data movement mapping rules can also
be part of the method...

...provide information about translation of information in tables and
attributes of data sources to the **data** **warehouse** .

In an embodiment according to the present invention, the method also includes providing users the...

...automatically derived data types if they so choose. Embodiments can also provide analysis fimctions of **database** contents, such as market basket analysis for customer buying behavior, customer valuation analysis, customer segmentation...

...The present invention provides techniques, including a method for organizing information from one or more **databases** , including legacy **databases** , in a **data** **warehousing** environment. Methods according to the invention can provide for more efficient use and storage of...

...nation. In an exemplary embodiment, the invention provides a method for providing a customer centric **data** **warehouse** for business information. VVhile the invention will be discussed generally in terms of such customer...

...limiting.

Fig I illustrates a simplified block diagram of representative customer data analysis architecture for **data** **warehousing** in a particular embodiment according to the present invention. This diagram is merely an illustration...

...a plurality of components in a particular embodiment according to the present invention, including a **data** **warehouse** I 00, that can comprise customer centric information, for example, a schema generation component, denoted104, that reference data, as denoted by arrows 1 1 1 stored in **data** **warehouse** I 00. A plurality of data sources IO 1, from which data can be moved into **data** **warehouse** 1 00, as indicated by arrow 1 12 are also illustrated in Fig. 1. **Data** **warehouse** 1 00 provides data accessibility to a plurality of functions and applications, such as meta ...

...and generated customer data analysis functions 104. Many of these components are defined by a **data** **warehouse** builder 109.

A presently preferable embodiment includes a **data** **warehouse** builder 109
central to the environment. **Data** **warehouse** builder 109 is operative to perform a wide variety of tasks including building and managing a **data** **warehousing** environment. These building and managing tasks can comprise tasks such as integrating meta data information...

...example, a data schema 107, data processing and data movement rules 106, and the like. **Data** **warehouse** builder 109 can also perform the tasks of generating a data schema, such as data schema 107, for a customer-centric **data** **warehouse** , such as **data** **warehouse** 109, and providing a data repository for meta data, such as data repository 105.

Meta-data defined and organized by **data** **warehouse** builder 109 can include a data schema, such as a **star** **schema** , a **reverse** **star** **schema** , as well as many other data schema topologies, a plurality of source data processing, movement and loading rules, job schedules for loading or maintaining data flow within the **data** **warehouse** , user provided parameters for code generation of customer data analysis functions, and the like.

Further, **data** **warehouse** builder can generate customer data analysis

function code 102, 104, manage the operation of the building and
maintenance of data warehouse I 00, manage the data flow across the
systems I IO- 1 12 and manage the constructing and maintaining of the
data   warehouse I 00.

A presently preferable embodiment according to the present invention
provides **data   warehouse** 1 00 defined by **data   warehouse** builder
109. **Data   warehouse** 1 00 provides support for customer-centric data
analysis and customer-centric decision making. **Data   warehouse** 1 00
can accept data from a plurality of sources, as represented by arrow 112
of Fig. 1, such as data sources 101. Data sources can include existing
legacy **database** systems, existing business applications, legacy
accounting , management information systems and the like. This **data**
warehouse is defined according to data schema 107 generated by the **data**
 warehouse builder 109.

Data sources IO 1 represents one or more legacy systems having original
customer...

...any of a wide variety of different formats, such as flat files, ASCII
files, relational **database** tables and the like. Embodiments according
to the present invention provide the capability to pre-process the data
before incorporating it into the **data   warehouse** . Additionally, the
present invention provides techniques for incorporating data 1 12 into
the customer-centric **data   warehouse** I 00. Data 1 12 can be
consolidated, transformed and formatted based on one or more of a
plurality of mapping rules 106 by **data   warehouse** builder 109 before
being moved into the **data   warehouse** and populated into the **data**
base .

Customer data analysis functions 102, 104 can access data populated in
the customer-centric **data   warehouse** to analyze customer behaviors,
business activity correlation patterns, and the like. Customer data
analysis functions...

...functions 102 and dynamically generated customer data analysis functions
104. These analysis functions can analyze **database** contents providing
insight into the operations of the enterprise.
In a particular embodiment according to...

...be provided as built in functions. Such functions can access meta data,
such as meta **data   stored** in meta data repository 105 of **data**
warehouse builder 109. In a presently preferable embodiment, meta data
repository 105 can include information about...

...Such meta data enables accessing applications to understand and retrieve
data located in customer centric **data   warehouse** 100.

In a particular embodiment according to the present invention, a **data**
 warehouse builder, such as **data   warehouse** builder 109 generates
code for one or more of a plurality of dynamically generated customer...

...of Fig. 1. Meta data information can be embedded in the generated code
by the **data   warehouse** builder 109.

Customer data analysis applications 103 comprise front-end business
applications adapted to use...In a presently preferable embodiment
according to the present invention, a 1 5 novel reverse **star   schema**
data model provides customer data analysis capabilities not provided by
techniques heretofore known in the...

A data model represents an organization of data in a **database** . Choice
of a data model facilitates the use of data in certain ways and may...

...can be quite incompatible with other data models. Often, these
applications are re-implemented for **databases** having different data
models even though the underlying logic of the application may be similar
...

...applications can customize a data model by following the relationships
described in the meta model.

Database applications can be written to conform to a meta model and
refer to the detailed...

...of the multi-dimensional model.

Fig. 3B illustrates a representative meta model for a reverse **star
schema** in a particular embodiment for performing customer data analysis
according to the present invention. This...plurality of useful possible
ways of viewing customer data analysis results.
Embodiments employing a reverse **star   schema** provide a detail level
view for data that provides the capability to perform analysis based...

...and alternatives.

The data model of Fig. 4A is a data model having a reverse **star   schema**
organization.

Fig. 4A illustrates a representative data model comprising a focal group
2 1 0...

...simplified entity relationship diagram of a
representative example of a data model having a reverse **star   schema**
organization in a I 0 particular embodiment according to the present
invention. This diagram is...converted to a physical schema 403 that can
be used to create a customer-centric **data   warehouse** , such as customer
centric **data   warehouse** I 00. In a particular embodiment 1 5 according
to the present invention, a user customizes features of his or her **data
warehouse** based on characteristics of his or her particular application
and the availability of source data...

...which can include events or other transaction types, can be used to make
a customercentric **data   warehouse** by data type definitions 411, 413,
determination of primary keys and foreign keys 41 1...

...used to map data sources, such as data sources IO 1 to a
customer-centric **data   warehouse** , such as customer centric **data
warehouse** 1 00. Mapping rules 404 comprise meta data that describes how
the data in external sources can be mapped to the data table and
attributes in the **data   warehouse** .

Mapping rules 404 can further comprise a plurality of transformation
rules in some embodiments.

Fig...

...representative flow diagram of a simplified process for generating a
data model having a reverse **star   schema** organization in a particular

...embodiment according to the present invention. This diagram is merely an

...In many embodiments, these event transaction types can be used as domain constraints when the **data warehouse** is created. Some embodiments provide event transaction types as attribute values for customer event correlation...attributes to comprise the source of the data tables and attributes of the customer-centric **data warehouse** .

5 In a step 413, a plurality of data types is determined based on source ...

...0 1 of Fig. 1. Data types of tables and attributes in the customer centric **data warehouse** can be derived based on data types in the source tables. Many embodiments provide the...

...known to persons of ordinary skill in the art, such as for example, using a **database** design tool called ERWin/ERX by Platinum Technologies, Inc., a company headquartered in Oakbrook Terrace...

...departing from the scope of the present invention.

In a step 414, a customer-centric **data warehouse database** is created from the schema created in step 41 1. The **data warehouse** builder 1 00 can construct the customer-centric **data warehouse** based upon the schema 403 and **database** configuration information provided by a user. The **data warehouse** builder employs **database** commands and programming interfaces to accomplish building the **data warehouse** .
In a step 415, a plurality of data movement mapping rules is created.

Mapping rules...

...and attributes of data sources, such as data sources IO 1, to a customer-centric **data warehouse** , such as the customer centric **data warehouse** created in step 414. This can be accomplished using any number of techniques known to persons of ordinary skill in the art, such as for example, using a **database** design tool called EXTRACT by Evolutionary Technologies International, a company with headquarters in Austin, Texas ...

...of the present invention.

Figs. 6A-6F illustrate simplified user interface screens in a representative **data warehousing** method in a particular embodiment according to the present invention.

These diagrams are merely illustrations...

...invention. A first level includes a "project" folder 502 having components for a creating a **data warehouse** for a particular enterprise. Under the project level is a component level having a plurality of components belonging to the parent project folder. A first component 504 of "reverse **star schema** " is highlighted. The highlighting indicates that this component is the next component to be defined...

...particular
embodiment according to the present invention. Dialog box 503 is displayed whenever the "reverse **star schema** " component 504 is selected from project starting screen 501.

Dialog box 503 enables the user...

...Entering the appropriate information and clicking the "OK" button causes
the embodiment to present a **database** creation screen.

Fig. 6C illustrates the contents of a general tab of **database** creation
screen 505. Screen 505 includes a **database** name field 530, a **database**
files area 532 and a file properties area 534. The user enters
information appropriate for...

...6D.
Screen 507 includes fields to enter information about the kind and size
of a **database** transaction log, including a files area 542 and a file
properties area 544. The user...

...and clicks the "OK" button. The user can then I 0 move to the reverse
star **schema** customization screen.

Fig. 6E illustrates a reverse **star** **schema** customization screen 509 in
a
particular embodiment according to the present invention. Customization
screen 509...according to the invention. The embodiment of Figs. 6A-6F
can provide for a reverse **star** **schema** data model. However, other data
models and organizations of data can be used without departing...

...capability to translate entities from a meta model to a data schema to
form a **database** . In many embodiments, an SQL query can then be
generated to query the resulting **database** .

A customer activity correlation analysis layer 603 provides the
foundation of customer data analysis in layer 602. Layer 603 provides the
capability for customer activity correlation queries to access the
database of a customer-centric **data** **warehouse** .
Layer 603 references the meta model 607 in meta data repository 600 to
determine the data schema of data in the customer-centric **data**
warehouse .

Customer data analysis layer 602 provides customer data analysis
functions. Layer 602 comprises components that...

...meta data repository 600, and accessed by this layer.

Fig. 7B illustrates representative customer centric **data** **warehouse**
builder, such as the customer centric **data** **warehouse** builder 109 of
Fig. 1, in a particular embodiment according to the present invention.
This...

...of ordinary skill in the art would recognize other variations,
modifications, and alternatives. Customer centric **data** **warehouse**
builder of Fig. 7B comprises a data schema designer module 623 operable
to integrate business model requirements and data source analysis and
generate target data schema for the customer-centric **data** **warehouse** .
The process of data schema generation has been discussed in reference to
Fig. 5B. Module...
...repository 600 stores meta data, including meta data about data schema,
such as the reverse **star** **schema** generated by schema designer module
623, data movement mapping rules, various job schedules to load or
maintain data flow to and within the **data** **warehouse** , user parameters
for code generation of customer data analysis, and the like.

Code generation module.

...5 code. Function code is generated based on stored meta data, such as
the meta **data** **stored** in meta data repository 600. Meta data, such as
the finalized data schema, and user...

...management module 627 manages operations of the
building, management, and maintenance of the customer-centric **data**
warehousing environment. This can include management of jobs, events,
exceptions, schedules and the like throughout the **data** **warehouse**
environment. Planned tasks can be managed as jobs using schedules.
Occurrences of activity can be...

...before data movement, physical data transport across networks, and data
loading tasks on destination machines.
 Data **warehouse** construction and management module 625 manages the
construction of the **data** **warehouse** , including **database** object
management tasks such as table creation, physical space management,
indexing and the like. Further, module 625 manages **data** **warehouse**
operations after the **data** **warehouse** has been constructed.

Customer data analysis function designer module 621 defines the
configuration of customer...by Job/Event/Schedule Management Module 627
to perform tasks based on operational meta data.

 Database applications comprise application code based on a data model
used in a **database** . Typically, the application code is designed and
developed after the data model is realized. Application...

...to application code enables the application to work with a particular
customer's unique requirements. **Database** designers make choices from
among competing factors for designing a particular data model and
accompanying...

...star schema comprises the data model and the multi-dimensional model
comprises the meta model. **Data** **warehousing** techniques can be embodied
using many data model and meta model combinations. Meta models simplify
...

...called the schema, which can be a star schema, or others.

A schema is a **database** organization corresponding to a data model.
Records in dimension tables of a relational **database** can be mapped to a
plurality of indices of the dimensions in multi-dimensional model, and
the records in a **database** fact table can be mapped to the measures or
data points in the multi-dimensional...

...used in a plurality of corporate-wide decision support applications.
Various applications, tools, systems, frameworks, **database** managers and
the like can be embodied as re-tisable products based on the meta...

...data model where an improved or optimized analysis is desired for use
with customer centered **data** **warehousing** systems and applications.
Thus, in some embodiments, the techniques of the present invention could
provide access to many different legacy business, governmental and
educational **databases** of all kinds. Of course, one of ordinary skill in
the art would recognize other...

Claim

JMB   Date: 13-Jul-05

...of data sources of said
enterprise;
forming a data organization for said model;
creating a **database** having said data organization;
translating data from said at least one of a plurality of...

...data organization, to form a plurality of translated data;
incorporating said translated data into said **database** ; and
1 0 performing analysis on said translated data in said **database** ,
wherein said 1 1 data organization comprises at least one of a plurality
of data...

...data tables to'form a data schema, wherein said data schema
6 is a reverse **star** data **schema** ;
7 determining at least one of a plurality of attributes based on data
types of...

...determining for said attributes at least one of a plurality of primary
keys;
creating a **data** **warehouse** **database** from said data schema;
creating at least one of a plurality of data mapping rules...

...rules providing translation infon-nation for tables and attributes of
said data sources to said **data** **warehouse** .

25 The method of claim 24 further comprising defining for said
attributes at least one...

...method for integrating customer data analysis tools with at least
one of a plurality of **database** systems, said method comprising:
installing a **data** **warehouse** **database** , said **database** having a
reverse **star** **schema** data model, said **reverse** **star** **schema**
mapping to data in said at least one of a
plurality of **database** systems;
performing customer data analysis using said **data** **warehouse** **database**
.

31 The method of claim 30 wherein said customer data analysis
comprises customer purchasing behavior...

...522
rl service based
Cancel Help
FIGm 6B
SUBSTITUTE SHEET (RULE 26)
530
505
Create **database**
General Transaction Log
 Database Name
 Database files
File n Initial size(MB)
5 3 2 ame [Location file group
....
File Properties...

...RI (D Restricted legrowth(MB) F=
F-O-W71 F@@j
FIG, 6C
-r5O7

Create database ...LOFF

General ITransaction Log
Database Files
File name I Location Initial size(MB a rou
542
.... LEI
... .
....
File Properties
--oAutomatically...FIG, 7A
SUBSTITUTE SHEET (RULE 26)
/ 16
Customer Data Customer-Centric Data Processing
Analysis Business **Data   Warehouse** and Movement
Logic Code Construction, from source to
Generation Management **Data   Warehouse**
Code 624 Data 625 Data 626
Generation Warehouse Processing/
Module Construction/ Movement/
Management Loading
Module...

...minimum documentation to the extent that such documents are included in
   the fields searched Electronic **data   base** consulted during the
   international search (name of **data   base** and, where practicable,
   search terms used)
   WEST
   search terms: **data   warehousing** , meta data, enterprise, business,
   database
   C. DOCUMENTS CONSIDERED TO BE RELEVANT
   Category* Citation of document, with indication, where appropriate, of...

 5/3,K/8   (Item 8 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00579157   **Image available**
METHOD FOR VISUALIZING INFORMATION IN A DATA   WAREHOUSING   ENVIRONMENT
**PROCEDE   DE   VISUALISATION D'INFORMATIONS DANS UN ENVIRONNEMENT DE DEPOT DE
    DONNEES**
Patent Applicant/Assignee:
  METAEDGE CORPORATION,
  CHEN Li-Wen,
Inventor(s):
  CHEN Li-Wen,
Patent and Priority Information (Country, Number, Date):
  Patent: WO 200042530 A1 20000720 (WO 0042530)
  Application: WO 2000US1075 20000113   (PCT/WO US0001075)
  Priority Application: US 99116016 19990115; US 2000483385 20000113; US
    2000483182 20000113; US 2000483386 20000113
Designated States:
(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)
  AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB
  GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA
  MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA
  UG US US US US UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ TZ UG ZW AM AZ BY
  KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
  BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

METHOD FOR VISUALIZING INFORMATION IN A DATA WAREHOUSING **ENVIRONMENT**
Fulltext Availability:
  Detailed Description
  Claims

English Abstract
    According to the invention, techniques for visualizing customer data
    (103) contained in **databases** (6), **data marts** and **data warehouses**
    (8). In an exemplary embodiment, the invention provides a method for
    graphically analyzing relationships in...

...from a variety of sources in order to provide visual representations of
   data in a **data warehousing** environment (8). ...

Detailed Description
  METHOD FOR VISUALIZING INFORMATION IN A **DATA**
  WAREHOUSING ENVIRONMENT
  CROSS-REFERENCES TO RELATED APPLICATIONS
  This application claims priority from the following U.S...

...APPARATUS FOR PROCESSING CUSTOMER DATA
  I 0 FOR OLAP INTEGRATION AND APPLICATION INTEGRATION BASED ON
  REVERSE STAR SCHEMA ," (Attorney Docket Number 19608-000200US) filed
  January 15, 1999.

  The following commonly-owned co-pending...

...S. Patent Application Serial No. Li-Wen Chen
  entitled,"METHOD FOR VISUALIZING INFORMATION IN A **DATA**
  WAREHOUSING ENVIRONMENT," (Attorney Docket Number 19608-0002 1 OUS);
  2. U.S. Patent Application Serial No. , Li-Wen Chen
  entitled, "APPARATUS FOR VISUALIZING INFORMATION IN A **DATA**
  WAREHOUSING ENVIRONMENT," (Attorney Docket Number 19608-000220US);
  and
  3. U.S. Patent Application Serial No. Li-Wen Chen
  entitled, "SYSTEM FOR VISUALIZING INFORMATION IN A **DATA**
  WAREHOUSING ENVIRONMENT," (Attorney Docket Number 19608-000230US).

  BACKGROUND OF THE INVENTION
  The present invention relates generally to computer **database** systems,
  and specifically to methods for visualizing information having dynamic
  formats stored in a **data warehousing** environment.

  Few could foresee the rapid development of computer technology just a
  few years ago...can also be part of the method. Thereupon, data can be
  migrated from the first **database** to the second **database** according to
  the mapping.

  A third aspect in accordance with the present invention provides for a
  method of analyzing information from a **database** . The **database** can be
  organized according to a first data model. The method can include
  receiving as...

...in analyzing and understanding the performance and efficiency of
   operations. Decision support systems can include **data warehouse** ,
   datamarts, and the like. Decision support systems are predominately based
   on multidimensional models, and can...front end" to OLAP tools that

accept users' command inputs. An OLAP server 2 generates 4 database
queries 4 for databases 6 from users' command inputs. The users can
enter command inputs using a graphical user...

...GUI) or command line interfaces and the like. The command inputs can be
applied to **database** 6 in order to retrieve information that can be
provided to the user for presentation...

...with multidimensional model 5, for example. The OLAP server can
translate users' command inputs to **database** queries using a mapping of
a users' multi-dimensional data model, as will be discussed...

...3 can comprise a mapping from the user's multidimensional data model 5
to a **database** model, such as **data base** 6. OLAP meta data 3 can
provide a mapping of tables and attributes of multi-dimensional model 5
to dimensions and facts for **database** 6, for example.

6
OLAP generated queries 4 can be generated by OLAP server 2 to retrieve
a result set from **database** 6, for example. Multi-dimensional models 5
comprise conceptual models that can provide a "macro...
...console can display the data models to users in a I 0 GUI, for example.

  Database 6 is created by the decision support manager 2 1. Users can
define a schema for **database** 6 from an administration console 20.
Ad-ministration console 20 can be co-located with...

...console 20.

After users define their models, the decision support manager 21 can
automatically create **databases** , such as **database** 6, according to the
users' data model definitions. The decision support manager 21 can
generate...

...dimensional cube 5, for example. Manager 21 can generate procedures and
mapping rules to populate **databases** with data from the **data
warehouse** 8.

Meta data repository 22 can store meta data used by decision support
manager 21...

...support manager 21 can comprise a management process for managing the
intermediary table cache 7.
  Data warehouse 8 comprises a data repository for customer data,
business
operational data, and the like. **Data warehouse** 8 can comprise a
database , and can be
7
used as an operational **data store** , for example. In a presently
preferred embodiment, **data warehouse** 8 can have an identity centric
data organization with customer information comprising the center
identity...

...6 4reverse star schema" data model. This data organization comprises a
"back-end tier" of **data warehouse** 8, while the front end tier is
based on a data model called a "star...

...transformed and moved before it is used. The data can be transformed
into a reverse **star schema** data model, for example, when it is stored
into the **data warehouse** 8.

Analysis reports IO can be generated from the contents of data
warehouse

8. Users can request reports from the administration console 20. Manager
21 can formulate a query to **database** 6 in order to retrieve data.
Manager 21 can send the data to the user as a report.

Applications I I comprise business applications, and the like, that work
with **data stored** in **data warehouse** 8. Applications I I can
comprise sales force automation applications, marketing automation
applications, E-commerce...

...customer-centric decision support functions based on tables 12 that can
be generated from the **data warehouse** 8, for example.

OLAP meta data can be generated based on a defined data model...scope of
the present invention.

A data model represents an organization of data in a **database** . Choice
of a data model facilitates the use of data in certain ways and may...

...applications typically require different data models that are usually
quite different from one another. Thus, **database** applications are
typically customized to the data model used by the **database** . These
applications can be implemented for **databases** having different data
models even though the underlying logic of the application may be similar
...
...code; and 3) the usefulness of the application when using a particular
specialized data model.

Database applications can be written to conform to a meta model and
refer to the detailed...

...meta model combination is the star scherna/multidimensional model
combination that can be useful in **data warehouse** applications. In
this combination, the star schema comprises a "universal data model" and
the multidimensional model comprises a meta model.

Data warehouses can use multi-dimensional models, such as meta
models,
to conceptualize business operations, for example...

...are mapped to the indices of the dimensions in a multi-dimensional model
of the **database** , and the records in the fact table can be mapped to the
measures or data points in the multi-dimensional model of the **data
base** .

I 0
11
xg T-uolsno v 2111AUTI suotluziuvi?.io 7alup p;Dsloq;Douuuuojiod
luuoijujodo...detail below with reference to Figs. 3A-3D using an example
of a business customer **data warehouse** .

Figs. 3A-3D illustrate simplified entity relationship diagrams for
representative example information relationships, or "schema...may
include other types of analyses. Information to be analyzed is retrieved
from a customer **database** , which can be part of a **data warehouse** ,
such as **data warehouse** 8 of Fig. IA, for example, or a **data mart** .
In many embodiments, this information will be directly or indirectly
related to a specific customer...

...In a representative embodiment consolidating and structuring information
can comprise extracting the information from source **databases** ,
transforming it into formats compatible with the underlying meta model,
which can be a reverse **star   schema** , for example, and then loading the
data into the meta model.

In a step 504...simplified entity relationship diagram of a
representative example of a data model having a reverse **star   schema**
organization in a particular embodiment according to the present
invention. This diagram is merely an...data model where an improved or
optimized analysis is desired for use with customer centered **data
warehousing** systems and applications. Thus, in some embodiments, the
techniques of the present invention could provide access to many
different legacy business, governmental and educational **databases** of
all kinds. Of course, one of ordinary skill in the art would recognize
other...

Claim
... 1 . A method for creating a multi dimensional report from information
in at least one **database** , said method comprising:
receiving a definition of at least one customer profile of a plurality...

...11 A method for creating a multi dimensional report from information
in at least one **database** , said method comprising:
receiving a definition of at least one customer profile of a plurality...

...a user input indicating a report configuration selection;
extracting information from said at least one **database** ;
1 1 creating at least one first dimension table based upon said report
configuration selection...

...said information comprises health
care information.

20 A method of transferring information from a first **database** , said
first **database** organized according to a first data model, to a second
database , said second **database** organized according to a second data
model to serve as the basis of analysis of...
...said first data model to said second data model;
migrating said data from said first **database** to said second **database**
according to said mapping.

21 The method of claim 20 wherein said first data model...

...26

29 The method of claim 20 wherein said second data model comprises
a reverse **star   schema** .

30 A method of analyzing information from a **database** , said **database**
organized according to a first data model, said method comprising:
receiving as input a ...of claim 30 wherein said information comprises
health
care information.
27
/19
Multi- Generated
dimensional **Database**
PoIMA Model

Intermediary
Table Cache
OLAP Data
Server. nerat Source
Data   Warehouse   C?
'S 14
OLAP
Console
0
103 k
k
ports
Tables Ge
on Demand
App...

...Foreign keys
Dimension Dimension
Table 3 Table 4
Primary Primary
Key Key
An Example of **Star   Schema**
Fig. 2A
Dimension 2
Dimension 3
act
Dimension I
Multi-dimensional Model,
Fig. 2B
/19...

...hierarchies
Dimensions of Dynamic Customer
Segmentation
Customer
ar
2 30
Service re e &
Billing Return
 Reverse   Star   Schema
Fig. 2C
/19
Legend
Static hierarchies for Dynamically generated
customer dimension hierarchies for
. . . . . . customer dimension...

...tables in the
Intermediary Table
r2ch
Customer
Profiling
Hierarchies Create Customer .04
Classification compone=
in **Reverse   Star   schema** , for
each customer profiling
Create Customer group and update profiling
%10 keys in tables of...minimum documentation to the extent that such
documents are included in the fields, searched Electronic **data   base**
consulted during the international search (name of **data   base** and,
where practicable, search terms used) Please See Extra Sheet.

C. DOCUMENTS CONSIDERED TO BE

...INTERNATIONAL SEARCH REPORT Int 'monal applicatior) No.
PCT/USOO/01075
B. FM@DS SEARCHED
Electronic **data** **bases** consulted (Name of **data** **base** and where
practicable terms used):
WEST
Search terms: **Data** **Warehouse** , meta-daw. cusomer profile, hierarchy,
customer records. **database** table. business
performance mcasures
Form PCT/ISA/210 (extra sheet) (Julv 1998)